

| STEC Guidance Intelligence and Development Scales Second Edition (IDS2) September 2022 | |
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| Publisher: | Hogrefe |
| Date Published: | 2021 |
| Age Range: | 5:0 to 20:11 (but note that this does not apply to all of the subtests) |
| Access Level: | Level 3 Closed: 'The IDS-2 is designed for use by a psychologist or professional who has had training and/or experience in administering cognitive or developmental assessments to children and adolescents.' (p2 Administration and Scoring Manual) |
| Cost | Pricing information is available at https://www.hogrefe.com/uk/shop/media/downloads/sample-reports/5562001_PricingInformation_wki.pdf |
| <p>Test Content: what tests are included and what do they measure/evaluate?</p> <p>What is its purpose or design?</p> <p>IDS-2 is a test battery for measuring Cognitive and General Development Domains. It states that it is designed to identify difficulties at an early stage and help assessors understand the 'whole child,' using both quantitative measures and qualitative observations.</p> <p>'Typical uses of the IDS-2 include the identification and diagnosing of intellectual disabilities and learning disorders, as well as the evaluation of cognitive and motor skills. The IDS-2 provides an understanding of a child's emotional strengths and weaknesses and can inform the professional as to the adolescent's motivation and attitude'. (website)</p> <p>How it is organised?</p> <p>There are two main domains assessed:</p> <ul style="list-style-type: none"> ▪ Cognitive, which includes intelligence and Executive Function; and ▪ General development, which includes psychomotor skills, social-emotional skills, scholastic skills and motivation and attitude | |

Cognitive domain

Intelligence scales

The intelligence area of the cognitive domain consists of 14 subtests in two groups of 7 (Part 1 and Part 2).

Part 1: 7 subtests that produce an **IQ score**. Approximately 50 minutes to administer. The subtests cover 7 cognitive areas: Visual processing, Long-term memory, Processing Speed, Auditory short-term memory, Visual-spatial short-term memory, Abstract Reasoning, Verbal Reasoning.

Part 2 : a further 7 subtests covering the same 7 cognitive areas. Approximately 90 minutes to administer both Part 1 and Part 2. Administering both Part 1 and Part 2 produces an **IQ profile** plus seven **intelligence**. The seven factors are:

- Visual processing: the ability to perceive, analyse, store and retrieve visual information
- Long-term memory: the ability to store and retrieve information
- Processing Speed: the ability to carry out cognitive tasks automatically and fluently
- Auditory short-term memory: the ability to process, store and retrieve auditory information
- Visual-spatial short-term memory: the ability to process, store and retrieve visual and spatial information
- Abstract Reasoning: logical and deductive reasoning (deduction involves using a rule to solve a problem)
- Verbal Reasoning: acquisition and use of verbal knowledge

Executive Function scales

These are skills that involve self-regulation and goal setting and require the pupil to think about the task (rather than relying on automatic responses). 4 subtests assessing aspects of EF: mental flexibility, inhibition, planning and working memory. Approximately 30 minutes to administer all 4 subtests.

General development domain

These scales measure a range of general development skills, divided into the following areas:

- Psychomotor skills: 3 subtests assessing gross motor skills, fine motor skills and visual motor skills. Approximately 20 minutes to administer
- Social emotional skills: 3 subtests assessing social competence (applying behaviours important for social interactions, such as compassion, helping

behaviours, conflict resolution and relationship skills) and emotional competence (being aware of one's feelings, expressing feelings and regulating emotions). Approximately 15 minutes to administer

- Scholastic skills: 4 subtests assessing logical mathematical reasoning, language skills, reading and spelling. Approximately 30-60 minutes to administer, depending on age.
- Motivation and attitude: 2 subtests rating scales that are completed by the assessor. The rating scales are only used with ages 11 to 20 years. Approximately 7 minutes to administer.

At the end of each set of tests for the intelligence, executive function and general development domains there is a cooperation during testing checklist

Parallel forms?

There are no parallel/alternate forms

What types of score does it offer?

Scaled scores for subtests

Standard composite score for IQ scales (7 or 14 subtests)

Average scaled scores for other areas rather than a composite

Confidence Intervals are given for standard composite IQ scores via online scoring. It is possible to calculate confidence intervals for other scores using SEM data from the technical manual but these are not automatically calculated via the online platform

Description of Individual Subtests

| Subtest | Ability measured | Description |
|------------------------------|----------------------------------|---|
| INTELLIGENCE Part 1 | | |
| Shape design* | Visual processing | The pupil has to reproduce a geometric design using rectangles and triangles |
| Parrots* | Processing speed | The pupil has to cross out parrots with two orange features and which are facing a tree trunk on the left of the sheet quickly and accurately |
| Digit and letter span | Auditory short term memory | The pupil has to repeat sequences of numbers and letters. The sequences are repeated as they are given and backwards |
| Shape memory | Visual spatial short term memory | The pupil has to remember and recognise the shape and position of geometric figures |

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| Matrices: completion* | Abstract reasoning | The pupil has to identify how a figure changes and then apply the same change to a different figure |
| Naming categories | Verbal reasoning | The pupil has to name the correct category for groups of words (for example, apple, banana and orange are all fruit) |
| Story recall | Long term memory | The pupils listen to a story and then a minimum of 20 minutes later is asked to recall the story |
| INTELLIGENCE Part 2 | | |
| Washer design* | Visual processing | The pupil has to arrange washers by copying a given design |
| Boxes* | Processing speed | The pupil has to cross out groups of three or four boxes quickly and accurately |
| Mixed digit and letter span | Auditory short term memory | The pupil has to repeat mixed sequences of numbers and letters. The sequences are repeated as they are given and backwards |
| Rotated shape memory | Visual spatial short term memory | The pupil has to remember and recognise the shape and position of a rotated geometric figure |
| Matrices: odd one out* | Abstract reasoning | The pupil has to look at an array of figures and work out which one does not fit with the others |
| Naming opposites | Verbal reasoning | Pupils are asked to name the opposites of given words |
| Picture recall | Long term memory | The pupil has to look at a picture and after a period of elapsed time describe it freely and with cues |
| EXECUTIVE FUNCTION | | |
| Subtest | Description | |
| Listing words* | The pupil is asked to list words according to a category or initial letter | |
| Divided attention* | The pupil is asked to cross out left facing parrots with two orange features at the same time as listing animals | |
| Animal colours* | Saying the colours of animals as quickly as possible with different types of distracting information | |

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| Drawing routes* | The pupil has to draw routes |
| PSYCHOMOTOR SKILLS | |
| Gross motor skills* | Tasks that assess balance and coordination. The pupil has to walk on a rope with eyes open and closed, catch and throw a ball and jump sideways over a rope |
| Fine motor skills* | Tasks that assess manual dexterity and speed of performance. |
| Visual motor skills* | Tasks that involve drawing between lines, copying shapes and drawing mirror images |
| SOCIAL-EMOTIONAL SKILLS | |
| Identifying emotions | The pupil is shown photographs of children and has to identify the emotion |
| Regulating emotions | Scenarios relating to anger, fear and sadness are read out. The pupil has to give strategies for regulating the emotions |
| Socially competent behaviour | Social situations are presented and the pupil has to name socially competent behaviour |
| SCHOLASTIC SKILLS | |
| Phonological awareness (age 5 – 10:11) | Six different tasks that involve detection and manipulation of sounds: <ul style="list-style-type: none"> • Syllable segmentation • Rhyme detection • Phoneme identification • Phoneme segmentation • Elision • Spoonerisms |
| Receptive language (age 5 to 10) | The pupils is asked to follow instructions that increase in length and complexity |
| Expressive language (age 5 to 10)* | The pupil is shown pictures and asked to make up a sentence that includes the word or words illustrated |

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| Reading comprehension (age 7 to 20)* | The pupil reads two passages out loud and is asked questions about the passages |
| Single word reading (age 7 to 20)* | The number of words read accurately in 30 seconds |
| Single non word reading (age 7 to 20)* | The number of non-words read accurately in 30 seconds |
| Logical mathematical reasoning* | The pupil has to solve mathematical problems |
| Spelling | Writing spoken words from dictation |
| MOTIVATION AND ATTITUDE | |
| Conscientiousness | Questionnaire about conscientiousness and achievement motivation |
| Achievement motivation | Questionnaire about achievement motivation |

When the 14 intelligence subtests are used, the following intelligence factors are assessed:

| Area | Description | Subtests used |
|---|---|--|
| Visual processing | The ability to perceive, analyse, store and retrieve visual information | Shape Design Washer Design |
| Long term memory | The ability to store and retrieve information | Story Recall Picture Recall |
| Processing speed | The ability to carry out cognitive tasks automatically and fluently | Parrots Boxes |
| Auditory short term memory | The ability to process, store and retrieve auditory information | Digit and letter span Mixed digit and letter span |
| Visual spatial short term memory | The ability to process, store and retrieve visual and spatial information | Shape memory Rotated shape memory |

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| Abstract reasoning | Logical and deductive reasoning (deduction involves using a rule to solve a problem) | Matrices: completion Matrices: odd one out |
| Verbal reasoning | Acquisition and use of verbal knowledge | Naming categories Naming opposites |
| <p>Timed/Time Limit/Untimed</p> <p>Subtests marked * are timed or have a time limit. All others are untimed.</p> | | |

Strengths

Content

- It is useful to have a wide range of assessment materials. Taking the whole kit into a school gives a lot of flexibility if other issues arise during an assessment and the assessor feels that a different or additional direction would be useful (for example if language or SEMH issues arose).
- 'One stop shop' for range of areas. It would be possible to carry out all of the required elements for a diagnostic assessment using the IDS-2 alone (except that a cognitive profile would require use of some of the intelligence scales which would not normally be available below Level 3). The phonological awareness element of a cognitive profile uses IDS-2 subtests that are not part of the intelligence scales. However, due to the ceiling age levels for some subtests (particularly the phonological subtests in the General Development Domain), this would only be possible for ages up to 10 years 11 months.
- Some subtests are suitable for EAA work; for example, processing speed (parrots and boxes), auditory short-term memory tasks (digit and letter span, mixed digit and letter span), visual spatial short term memory (shape memory and rotated shape memory), single word reading fluency, single non-word reading fluency and reading speed score for comprehension passages to evidence extra time.
- The modular structure does make administration easier because it is possible to spread testing over more than one session. Session length can be an issue with some pupils.
- Includes individual assessment of aspects of EF and motor skills.

Rigour of standardisation

- Large sample. Reliability compares well with other measures

Scores provided

- Provides scaled scores for subtests and standardised IQ scores.

Ease of administration and clarity of instructions

The materials are easy to use because the administration instructions and pupil materials are all in one stand up booklet. This means that there is no need to consult a separate manual when administering the test. Instructions for each subtest were generally clear.

Ease of recording responses and scoring

Scoring is online and is easy to use once set up. Online scoring reduces the human error element. Helpful and timely backup support is provided if needed. Record

sheets are clear and scoring manual clear. Easy to transfer the scores from the record sheet to the online forms due to clear numbering system.

Time taken

The time taken is commensurate with other similar tests of ability and achievement

Suitability of items for the UK

No issues arose when using for review. The test was originally developed outside the UK but the current IDS2 version is a UK version with UK standardisation.

Suitability of items for the age group

No issues arose when the test was reviewed

Relevance to a diagnostic assessment – what useful information does each test provide and where would this be used within the report format

- It is useful to have a wide range of assessment materials. Taking the whole kit into a school gives a lot of flexibility if other issues arise during an assessment and the assessor feels that a different or additional direction would be useful (for example if language or SEMH issues arose).
- Some subtests are suitable for EAA work; for example, processing speed (parrots and boxes), auditory short-term memory tasks (digit and letter span, mixed digit and letter span), visual spatial short term memory (shape memory and rotated shape memory), single word reading fluency, single non-word reading fluency and reading speed score for comprehension passages to evidence extra time.
- In relation to reading, the IDS-2 samples phonological skills in much more depth than the WIAT but limited age range for standardisation.
- IDS-2 has a timed test of single word reading fluency and a timed test of single non-word reading fluency (30m seconds for each) which could replace TOWRE 2 for Reading Efficiency.
- IDS-2 has a graded single word spelling test.

Information provided in manual or other documents about analysing responses and what they reveal

The technical manual includes a chapter about interpretation, including some case examples. However there is no guidance about a more detailed response analysis (for example, an error analysis of spelling or analysis of types of reading comprehension questions that might provide some more diagnostic information via analysis of pupil responses).

Information provided in manual or other documents about observing and interpreting behaviours

There is the usual guidance about pupil behaviour during assessment and impact on assessment outcomes. In addition the test includes a evaluation of motivation and attitude for 11 to 20 year old. This way of quantifying these affective factors is a novel element of this test. There is also a cooperation during testing questionnaire on each record form that can be used with all ages.

Additional information provided about diagnosing SpLDs

This test is not designed as a SpLD diagnostic test

Issues to consider

Content

- The Technical Manual suggests that Phonological Processing skills could be assessed using digit and letter span and mixed digit and letter span (Tests 4 and 11). These are standardised up to 20:11, but the Rapid Symbolic Naming subtests of CTOPP2 may be better to administer if the Phonological Awareness subtests from CTOPP2 have also been administered.
- As with all lengthy batteries, it is essential that the Technical Manual is read carefully to develop a full understanding of what each subtest measures and ensure that individual subtests are used appropriately within a diagnostic assessment.
- Additional tests would need to be purchased due to age limitations of the phonological awareness tasks, no graded single word reading task, no tests examining extended writing/copying and no silent prose reading task. There is a Reading Comprehension task but passages are read out loud. The new report format prefers this task to be silent
- Although the test offers an IQ screening score based on just two subtests, best practice would be to administer the 7 subtests that make up Part 1 of the Intelligence scales
- Test users need to be aware of the rule relating to administration of Reading Comprehension. If the test taker reads fewer than 10 words correctly on the Single non-word reading fluency or Single word reading fluency subtests, Reading Comprehension is not administered. The test publisher has indicated that this “stop rule” was chosen to avoid frustration for the child. The assumption is that if the child already had difficulty when reading single words, one can assume that the text reading will also be too challenging. They based this assumption on their pilot studies with hundreds of children in Germany when developing the test. In such cases, where Reading Comprehension is an important element of a diagnostic assessment, it would be better assessed with a reading diagnostic instrument rather than a cognitive assessment that includes scholastic skills.

Rigour of standardisation

- Tests are standardised from the ages of 5:0 to 20:11 except:
- **Motivation and attitude:** both tests only standardised from the age of 11 years
- **Social and emotional skills:** *Identifying emotions* only standardised up to 10:11
- **Psychomotor skills:** *Gross Motor Skills* only standardised up to 10:11
- **Scholastic skills:**
 - Reading and spelling only standardised from the age of 7 years
 - Phonological subtests only standardised up to 10:11
 - Expressive and receptive language only standardised up to 10:11
- Some validity comparisons are made with German, Dutch and Italian versions.
- Currently no data are reported in the technical manual about ethnicity or EAL within the sample. However the following data were supplied by the publisher:
- The **IDS-2** sample was matched to the 2011 UK Census data (see the table below; N= 1367) but because there is not enough variance and the groups other than “White” are not large enough, the test authors could not conduct any meaningful analyses in terms of score differences between the ethnicities.

| Ethnicity | n | % |
|------------------|-------------|------------|
| White | 1162 | 85 |
| Black Caribbean | 18 | 1 |
| Black African | 17 | 1 |
| Black other | 2 | 0 |
| Chinese | 15 | 1 |
| Indian | 18 | 1 |
| Pakistani | 58 | 4 |
| Bangladeshi | 8 | 1 |
| Mixed | 69 | 5 |
| Total | 1367 | 100 |

** According to the 2011 census data: Amongst the 56 million residents in England and Wales, 86% were White, 8% were Asian/Asian British and 3% were Black/African/Caribbean/Black British.*

- Construct validity for Scholastic Skills, Motivational and attitude was evaluated using parent ratings of their child's ability rather than comparison with other batteries
- Reliability data for the social, and emotional areas are weak. In addition, the test user would need to be sure that the testee's expressive and receptive language development were not contributory factors. There is a high language load in these assessments.

Scores provided

- No composite scores provided for many areas.
- There are no confidence intervals for Scholastic Skills scaled scores so if these were needed the test user would have to look up SEMs and calculate
- Some standard scores give associated percentile ranks of 0. The test publisher reports that this is because the scoring tool rounds to whole numbers for the percentile scores

Difficulties with administering the tests

- The pack is very heavy to lift in an out of the car and the lack of a handle on the side of the case makes this difficult. There is clear advice about how to arrange the case and materials during an assessment; however, it is not always possible to find a suitable chair or surface for the case, especially in a Primary school where the chairs are very small!

Lack of clarity in instructions

- The instructions for the multiplicative reasoning tasks of the logical mathematical reasoning subtest were a bit confusing. Although this subtest samples a range of mathematical skills I feel that the WIAT looks more broadly at maths because there are three separate areas assessed: reasoning, written numerical skills and fluency. Not of all these are addressed in the IDS-2.